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AUTHOR Fisher, Charles W.; Berliner, David C.
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ABSTRACT

In this paper a broad perspective on the phenomenon of teaching and learning is presented. The complex dynamics of interaction between teacher, student, and educational researcher are explored. Conventional research in education is characterized as relying heavily on methods adopted from other types of research in such fields as agriculture and science. This methodology is not always valid in dealing with human beings who are changeable, volatile, and subject to varied pressures both within and outside of the classroom. Doubts about the amount of impact conventional research has on actual educational practice are raised. A system of "quasi-clinical" inquiry is outlined. This is a wholistic approach in which the researcher includes observation of teacher and student interaction, grouping patterns, playground fights, teacher isolation, etc. It is not restricted to examination of presentation of cognitive material; pretesting and posttesting. The quasi-clinical approach to educational research uses repeated measures in conjunction with planned interventions; studies role changes and relationships among participants; and has the dual objectives of generating knowledge while participating in a helping relationship with school personnel. (JD)

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QUASI-CLINICAL INQUIRY IN RESEARCH ON CLASSROOM TEACHING AND LEARNING

Charles W. Fisher and David C. Berliner

Far West Laboratory for Educational
Research and Development

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The purpose of this paper is to redress an imbalance in the styles of inquiry that guide research on teaching. Others in this symposium will discuss the classical experiment as the methodological core of conventional research on teaching. We think that classical experimentation has, for too long, been held as the sine qua non of excellence in educational research in general, and research on teaching in particular. Because the classical experiment has become a necessary and often sufficient condition for judging quality in research, other methods of disciplined inquiry have been severely under-utilized, underfunded, and most of all, under-respected.

In this paper we will describe what we believe to be crucially important characteristics of teaching and learning in elementary school classrooms. We will use this description of the phenomenon as a basis for proposing that conventional research has serious drawbacks which limit its appropriateness for the study of teaching and learning in elementary school classes. Finally we will propose an alternative approach, called quasi-clinical inquiry, which addresses these drawbacks. We believe that practical help to teachers and valid understanding of teaching and learning in classrooms emerge when quasi-clinical methods are used to study classroom phenomena.

The Phenomenon to be Studied

Before further exploration of methods of inquiry, let us examine briefly the phenomenon to be studied. We are interested in the conditions which influence learning in elementary schools. Students learn remarkably diverse things in school; they learn to read, write, and count; they learn facts and problem solving skills; and they develop preferences for friends, teachers, kinds of books, and social structures. But students are not the only ones who learn while at school. Teachers also are affected by the experience.

The core of the phenomenon of interest is the day to day interaction between teachers, students, tasks, and materials. This process can be observed and experienced in any local elementary school. However, what we observe in a classroom is the surface structure of the phenomenon, whose deeper structure is rooted in a series of social, political, and economic systems. Indeed, attempts to understand portions of the schooling process in isolation from the rest of the phenomenon have been of very limited utility. Three characteristics of the phenomenon have important consequences for understanding teaching and learning in classrooms.

First, the phenomenon is remarkably complex. The factors affecting school learning must surely number in the thousands. These include presentation variables, management and control structures, physical layout of the classroom, class membership, social milieu within the class, staffing and resource allocation within the school, parental influences, peer group influences outside the school and so on. The network of influences from these sources interact in a complex manner to produce,

or at least moderate, the behaviors observable in the classroom. In addition, the inhabitants of each classroom fill a wide variety of roles. Teachers operate as presenters, organizers, providers, and punishers. They also are parents, taxpayers, and employers. Students develop and maintain roles in relation to teachers, principals, peers, older children and so on. These and other factors attest to the complexity of the teaching-learning process in elementary schools.

Second, the phenomenon is dynamic. The factors which give rise to particular behaviors during one hour, on one day, do not continue in steady state for very long. Influences on individual children and teachers, as well as influences on classes and schools change from minute to minute and from day to day. It is a commonplace to hear a teacher state that "Today is just not a typical day." This statement is true, in that, the process changes enough that few days seem "typical."

Third, the phenomenon is extensive in time. A student is typically grouped with a class of thirty students and one teacher for ten months at a time. Social as well as cognitive skills are developed slowly over relatively long periods of time. Learning to read and write is achieved over several years. For teachers too, the phenomenon is extended in time. Teachers spend about 900 hours per school year with students. Substantial changes in teacher or student behavior can hardly be seen in a week, let alone a day.

The complex, dynamic and extensive characteristics of the phenomenon, in our opinion, have not been given enough attention. Conventional research often ignores the implications of these characteristics for the study of classroom teaching and learning.

Perspective on Conventional Research

The phenomenon of teaching and learning in elementary school classrooms has been addressed by a relatively large number of researchers. Several decades of work have been recorded in the array of journals which service the area; two major handbooks of research on teaching (Gage, 1963; Travers, 1973) have reviewed the field; and in recent years the ERIC collection has grown at a mind-boggling rate. The bulk of this work has attempted to apply methodology adapted from the physical sciences and agriculture to the phenomenon of interest. This methodology is characterized by factorial designs for the description and construction of treatments; and randomization or matching of subjects for the control of non-treatment variables. This approach, or procedures designed to approximate it, usually involves an analysis of variance in one of its several variations. We refer to this type of inquiry as conventional research.

In some areas, conventional research has been extremely productive. However, as a method of inquiry into the phenomenon of teaching and learning in elementary school classrooms, the approach has a number of serious drawbacks. The employment of a factorial design usually requires that a few levels of a few variables in the situation be orthogonally arranged and that all other variables be controlled by randomization or matching. This procedure often leads to the examination of effects in highly artificial situations. Unfortunately relationships derived in this manner do not seem to hold up in "real" classrooms. Furthermore the two major control devices of conventional research have serious limitations. Randomization is impractical outside the laboratory and matching is unsatisfactory since only two or three variables can be controlled at any one time.

These problems have been articulated in a number of different ways in each of several social science fields, yet in research on teaching and learning in classrooms we continue to apply the same conventional methodology. From our perspective, the phenomenon of interest can not be broken down into discrete sub-systems which when simply added together recreate the whole. The phenomenon of interest will not allow certain controls to be exerted without change in the phenomenon itself. In spite of these broad fundamental difficulties, conventional research has become practically synonomous with scientific method in educational research in general and in research on teaching in particular.

Problems in Conducting Conventional Research in Classrooms

The standards for scientific method and acceptability of data, used in educational research, are derived from the physical sciences, agriculture, and other, non-social sciences. Our concern that such methods or standards are inappropriate for the conduct of research in classrooms is not simply based upon "armchair" philosophising. Our attempts at conducting conventional research studies have forced us to recognize that there are "peculiarities" associated with doing research in schools which rarely concern the laboratory based physical scientists. Some tragic-comic examples[1] are readily found and deserve comment.

One research team planned a large scale study, involving thousands of high school students, hundreds of teachers, and dozens of schools. A major testing session was scheduled for the month of May. Thousands

[1]These examples are not all culled from Far West Laboratory research. Some of these anecdotes have been passed on to us by colleagues who have had the experiences. There are a great number of anecdotes illustrating problems with doing conventional research in the schools. One must eventually wonder whether they are exceptions or whether they are the rule.

of lengthy test booklets were distributed to teachers and on that predetermined target day in May the adolescents were tested. Unfortunately, on that same day, the temperature in this northern area rose to 70° after an extremely long and hard winter. That particular day was the first real sign that spring would come. The result, discovered as the tests were logged in for scoring and after school was out for the year, was that the student mortality rate on the testing was almost 50%. This situation necessarily complicated the interpretation of the results. Given certain realities of schooling, the precision required for the standardized test administration was simply inappropriate.

Another study investigated the effects of manipulating typographical characteristics in printed matter (e.g., color, letter size, underlining, etc.) The experimental materials consisted of prose descriptions of the blood stream. Very carefully designed and rather interesting pretests were given. The experimental treatments extended over a few weeks. The posttests were administered and analyzed. Different levels of the treatment had been administered to different intact classrooms. The clear superiority of one experimental treatment was duly noted and, to the eternal credit of the investigator, the teachers in that treatment were interviewed for their opinions and comments. The pretest, it seems, had stimulated such interest in the blood stream and related phenomena, that a small number of these classroom teachers supplemented the experimental materials with many useful charts, physical models, medical phamplets, and class discussions. We are pleased to report that innovative teachers do exist, and in this case, showed clear effects on student achievement. The experimenters'

need for control of the content taught required the teachers and students to be passive receptors of the externally imposed treatment. However, in intact classrooms, such treatments usually do not take precedence over teachers needs to educate children as best they can. This aspect of schooling creates serious problems of control for conventional research carried out in classrooms.

In another classroom study of knowledge acquisition the experimenter personally trained each tester very carefully. Each tester subsequently administered the achievement tests within a specific geographic area. A small group of southwest Indian children were part of the national sample. They, like the others in the sample were instructed in how to take this timed, group administered test. When the students seemed ready, the examiner instructed them to begin. Within seconds some students looked around, got up from their seats and collaborated with some others on the answer to the first question. As the somewhat frantic proctor stopped the class and explained again that they must each work individually, one bold youngster asked why? He explained that "If Sanchez knows the answer, then we all know the answer because Sanchez will tell us." He asked why each of them had to know all of the answers. The scientist working with inanimate objects or infrahuman species rarely confronts testing situations of such a nature. Human beings living in different groups, adhere to different mores which guide the thinking and behavior in their group. The interpretation of particular behaviors depends heavily on the context within which the behavior occurs. In particular, classroom based research is usually carried out with aggregations of very heterogeneous types of students. Conventional research often seems insensitive to the fact that these different types

of students in different contexts may not be reacting to the treatment that the experimenter thinks is in force. The perceptions of the subjects may differ so greatly from cultural group to cultural group that data may often have to be analyzed and interpreted separately for each of those groups.

Other peculiarities of classroom social science research abound. During a study of mathematics tutoring by paraprofessional classroom aides, a teachers' strike occurred. Schools remained open for the three weeks of the strike, but no treatment could be administered due to the chaotic conditions which prevailed. The treatment had been designed for nine weeks duration. Only a few weeks of the treatment was administered before the strike. Although the study was continued, the break in the middle of the crucial experimental period contributed to a general weakening of the treatment. Cloud chambers and cornstalks do not cease operating or growing in the middle of research focussing on atomic particles or nitrogen additives. But in cultural institutions where human subjects are the focus of scientific activity, the institutional representatives or the subjects themselves may be expected to do things that can confound the experiment.

In another research study teachers at many schools were asked to volunteer to take part in an evaluation of activities associated with independent learning systems for students. After the quota for the experimental treatment was filled, a sample of teachers who were not in the study agreed to take some of the measures along with the volunteer teachers. The nonvolunteer teachers operated programs that were substantially more traditional than the sample of teacher to be included

in the study. The ways in which volunteer and nonvolunteer teachers differ, influence studies in unknown ways. This, in turn, limits the generalizations to be drawn in unknown ways. While there are some notable exceptions, nonrandom selection of teachers and classes is the rule when studying teaching and learning in the schools. Furthermore, with increased legal requirements to obtain the informed consent of parents, the random assignment of children to treatments is becoming harder and harder to accomplish. In other fields of research involving for example, the choice of fertilizer for assignment to plots, or the assignment of litter mates to treatments, sample selection is completely controlled by the experimenter. With human beings in social institutions the practices governing the assignment of people to treatments is subject to forces which could invalidate the results of a conventional study.

Even when volunteer teachers offer to cooperate fully (for reasons which sometimes are hard to fathom, but which must be related to the never failing societal belief in the goodness of research), there are still peculiar problems. In our present research study we scheduled, in advance, testing of six students in a vacant classroom. When the tester arrived the only room available was a very large broom and storage closet. The children worked on the floor, some used buckets as desks, and there were only occasional interruptions by the janitor. On another day when student observation was scheduled, a special assembly was called and the observation was lost. On another day the speech therapist removed one of our identified children from the class for special testing. On two other days that had been scheduled for observation of classroom

processes the teacher or the student was absent. These five events, most of which led to missing observations, are commonplace when conducting classroom research. If you schedule 12 observation days in classes in order to watch particular students being instructed by their regular teachers in their typical classroom settings, you can expect to loose at least 3 observations. This is not the case when working with infra-human subjects and/or working with electronic equipment. Certainly, observations are missed in other fields. Power blackouts, microswitch malfunctions, illnesses, etc., will always plague an experiment. But such problems need not be of the magnitude to make ones data suspect, as is often the case in conventional educational research.

Political problems of research. Political factors in the enterprise of schooling create another class of problems which affect research conducted in schools (cf. House, 1973).

"Are there external political factors that influence the role and methodology of evaluation? You bet there are. And they are powerful... Sometimes political forces control the populations we can sample. Sometimes they limit the data we can gather. Sometimes they shape our instruments. Sometimes they influence the designs we can use. Sometimes they guide our interpretations. Sometimes they shape our recommendations. Sometimes they touch the wording of our reports. And they always influence the impact of what we recommend. (Brickell, 1976, p. 5)."

The political forces inherent in school systems have a large impact on the practice of school-based research. These forces can cause important modifications of experimental designs and substantially limit the generalizations made from the data.

Ethics and problems of research. Problems of ethics and morality arise in the conduct of research in classroom settings. When you test a student with a specially designed test tailored to your research interests, and the teacher asks to see the results, do you share those data? The scores may be misinterpreted or misused resulting in attributions to students that are patently false. What is the ethical thing to do? Can you deny the teachers access to test scores? Should you give them access to the test results, but only after extensive and expensive training in how the tests were constructed and what purposes they serve? Or should you simply give them the tests so that you can maintain their cooperation?

We have found a moral dilemma in our studies when using identical pre and posttests over a one year period. From the research point of view it is desirable that students show little knowledge of the subject matter at the beginning of the year, that they show growth, but that they do not reach "ceiling" at the end of the year. In such situations, the pretest is so difficult that it frustrates students and makes them feel very inadequate. At the end of the year, when experimenters appear with the same test, they are the recipients of undisquised hostility from the students. Yet, as planned, the experimenters must adhere to the testing schedule and readminister this still difficult test. What potentially powerful findings justify such treatment of students in classrooms? What findings can be trusted when data are obtained from such hostile subjects?

Another aspect of the problem arises during classroom observation. This is referred to by Barber (1973), in an article on pitfalls in research, as "experimenter-failure-to-follow-the-protocol effect."

It shows up, for example, when you are observing instruction and a child comes to you for help. Do you stop your systematic observation and help the child solve the problem? Or, do you stop systematic observation to help out in a class only when a child is, or could be, hurt? Or, should you always try to have observers remain objectively neutral to the humans around them? We also find it is not always the children who solicit help. Should you feel free to give advice to the teachers who have volunteered for your study and who hope to benefit from your research? What are your ethical responsibilities in these matters? The responses made by most observers to teachers and children who solicit help is to give it freely. But the observers and experimenters rarely report such events when the study is presented in written form. Why is it so embarrasing to admit that we act humanely when working in school classrooms?

There must be some way that useful information can be obtained from the study of classrooms, while at the same time allowing friendships and establishing helping relationships. Certainly this is not often done within the conventional model of experimentation. Furthermore, it is frowned upon by the standard bearers of conventional research. We think that failure to recognize the complexities of teaching and learning in classrooms and the human needs and relations which attend to that phenomenon, may be a major reason why conventional research has had so little effect on educational practice.

Conventional Research and Educational Practice

Large numbers of researchers and practitioners share the opinion that the impact of conventional research and evaluation on educational practice has been minimal. For example, in 1970 a team of observers

visited 67 schools (150 classrooms) in and around the major cities of 13 states, making anecdotal records and interviewing teachers and principals (Goodlad & Klein, 1970). They were especially interested in seeing which innovations, popular in the literature for at least 10 years, were actually being implemented in schools. They reported that the new procedures were almost totally lacking and that the diversity of materials often written about were practically non-existent. And, on the same issue, Shulman has written: "If the goal of educational research is significant improvement in the daily functioning of educational programs, I know of little evidence that researchers have made discernable strides in that direction (Shulman, 1970)."

We are well aware that the utility of all knowledge generated by the research community should not be judged by its impact on educational practice; but surely some research should have readily demonstrable implications for practice.

The reasons for lack of impact on practice are many. We note only briefly the lack of rewards for university based professional people who engage in helping rather than publishing; the false belief in the similarity of educational and industrial models of linkages between research and development; the continuing reliance on "reports" as the final product of many projects, with the accompanying belief that reprints of reports lead to changes in the behavior of teachers and students in classes; etc.

To this dirge we add our own voices. Traditional, conventional, or "basic" research approaches have failed to have impact on practice because they have failed to appreciate the complexity of the phenomena to be studied, and have failed to find a methodology appropriate for disciplined social science inquiry into educational matters. Ebel (1969) has also

recognized this problem:

> Some defenders of basic research in education, admitting its limitations and the difficulties attending it, still argue that it should be...pursued energetically because, in their view, there is no other way to improve education...They greatly underestimate the variety and power of other techniques of gathering data and solving problems. Doing basic research is not the only way, and probably not the best way, for a man to use his head to solve an educational problem. (Ebel, 1969, p. 19)

Is there a mode of inquiry which will allow an empirical social scientist to use his or her head to define and solve educational problems? We think that the quasi-clinical approach to research, discussed next, is better suited than conventional approaches for defining and solving such problems.

Quasi-clinical Inquiry

We have raised a number of issues concerning the application of conventional research to classroom instruction. We claimed that "conventional research" has limited utility in this area. The factors which tend to limit the utility of this research have been described before. In fact, it is surprising to find how often, how eloquently, and how long ago that most of these points have been made in the literature.

In this portion of the paper we outline a type of scientific activity which John Dewey forsaw as particularly appropriate to the study of education. He believed that the mode of inquiry to be adopted had to be one in which "educational practices provide the data, the subject-matter, which form the problems of inquiry. [Moreover, these practices have to be] ...the final test of value of the conclusions of all researchers (Dewey, 1929, p. 33)." We believe the activity, which we refer to as quasi-clinical inquiry is more appropriate for the study of teaching and learning in elementary schools than is conventional research. Quasi-clinical inquiry

generates knowledge about the phenomenon while those engaging in the process work cooperatively on the solution of specific classroom problems. It is expected that the inquiry will bring about positively valued and substantial change, at least in the sites where the field work is conducted. Research, development, and implementation functions are all subsumed in the activity. The same set of people, in the same classroom situations will attempt to solve problems in concert with the teachers and students involved. In this way, the knowledge produced by the activity will have a type of built-in validity. Whether or how this knowledge may be generalized to other sites will still be an issue, but the situation could hardly be any worse than we currently experience with conventional research. In general, we hold that clinical approaches are more suited to our purposes than conventional experimental approaches.

Clinical psychology is that branch of psychology which deals with psychological knowledge and practice employed to help a client find a better way to function. It includes training and practice in diagnosis, treatment, and prevention of difficulties, as well as research for the expansion of knowledge (English & English, 1958). Clinical educational psychology, a specialty to be developed, has as its clients teachers and students in classes engaged in the process of teaching and learning.

The clinical method is characterized by studying the client as a unique whole, with the goals of understanding and helping those clients. Thus clinical educational psychology would have as its goal the understanding of and remediation of problems in teaching and learning in classrooms. The clinical method makes use of and indeed values the intuitive characteristics of the clinician. The term quasi-clinical, in the title of this paper, is intended to denote considerable reliance on clinical

approaches, but without any desire to abandon measurement, quantification, hypothesis testing, and other aspects of empirical social science.

Using the terminology of Campbell and Stanley (1963) we may think of a classification dimension, anchored on one side by experimental methods and on the other side by clinical methods. At intermediate points of this dimension are methods represented by the terms quasi-experimental and quasi-clinical. Approaches represented by one end of the continuum tend to stress nomothetic concerns for which conventional experimental methods are usually best suited. The opposite end of the continuum stresses ideographic concerns for which clinical methods are usually best suited. Disciplined inquiry can occur at all points along the dimension (see Figure 1.)

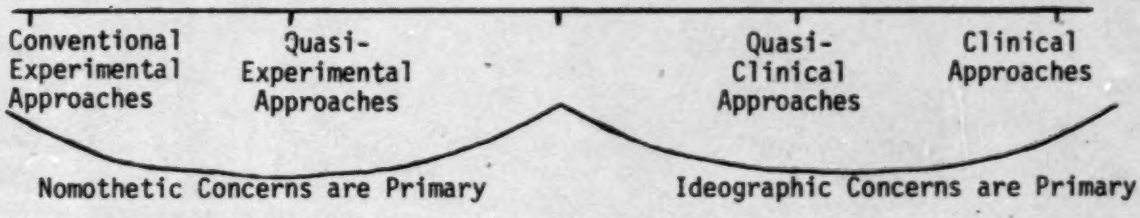

Figure 1. Approaches to the Conduct of Disciplined Inquiry into Teaching and Learning in Classrooms.

We are calling for increased activity in a form of educational inquiry which combines rigorous research with clinical practice. The following paragraphs describe major facets of these kinds of studies.

First, the quasi-clinical approach implies a broad view of the classroom teaching/learning phenomenon. Interest must not be restricted to the presentation of cognitive material. The phenomenon includes teacher-student

interactions, grouping patterns, playground fights, teacher isolation and support mechanisms, etc. Since the major responsibility of a teacher is to provide instruction for 25 to 30 students, the class is the primary unit of interest. Studies of teaching and learning must attend to this context. In keeping with the ecological nature of classroom teaching and learning, the "whole phenomenon" must be considered when addressing a specific problem. Influences beyond the classroom must often be taken into account.

Since quasi-clinical inquiry attempts to deal with the "whole phenomenon," a large number of variables or indices are necessary to describe the context of the site. It will be necessary to monitor a large number of processes which may seem peripheral to the specific focus of a particular study. In this way the investigation can be sensitive to unexpected covariations which may be related to the focal variables under study. The variables used in a particular study must cover the "breadth and depth" of the phenomenon.

In order to understand the context adequately, the researcher must "come to grips" with the phenomenon and be intimately familiar with that part which is the focus of the inquiry. This requirement demands that investigators spend large amounts of time observing and participating in school activities. As a result, a severe restriction is placed on the number of classes or teachers which can be studied at one time. One clinician would presumably work with a handful of classes at a time.

Quasi-clinical inquiry assumes a relatively longer time perspective than conventional research. Single classes will be studied over

extensive time periods. The duration of a study will as always, depend on the nature of the specific problem being investigated. But in this framework a month is considered to be a very short time and two years would not be inordinately long.

The roles of the participants in quasi-clinical inquiry differ considerably from those prescribed by conventional research. First, there must be open discussion of the inquiry process between clinician and teacher. The participants in quasi-clinical inquiry must operate as colleagues in the pursuit of some common goal. Each may have additional goals but the statement of the problem and the acceptable evidence for change must be agreed upon. Such agreements will probably be "negotiated" several times during the course of an investigation. The ideal situation calls for several agents (usually clinician(s) and teachers(s) but others could be involved depending upon the problem) with different skills and backgrounds to work cooperatively on an identified problem. This implies that agreement will be reached among all parties involved before actions (interventions, testing, etc.) will be taken.

In such endeavors clinicians and teachers operate as colleagues as opposed to experimentor and subject. This characteristic has profound influences on the nature of the inquiry. It requires that the researchers take on a role which is more than purely objective; he or she must come to grips with the phenomenon and engage in "hands-on" activities in the classroom. The researcher must shed at least some of the role characteristics associated with an outsider. A major goal of quasi-clinical inquiry is to understand as fully as possible the role characteristics of the inhabitants of the school culture.

Methodology in quasi-clinical inquiry. In conventional research we have been taught to first ask the methodological question:

> "How do I obtain data for which the ambiguity of evaluation is reduced to the lowest possible degree? It is this question that leads to the frequent and popular methodological discussion of the functions of control groups, the use of before-and-after designs, the nature of random sampling, and the strengths of blind and double-blind strategies, to name just a few issues. (Willems and Raush, 1969, p. 3)."

But as Willems and Raush (1969) point out, there is another, prior question to ask:

> "...Given a purpose or set of purposes, a question or set of questions, what kinds of investigative exercises, operations, and strategies should I embark upon to fulfill the purposes and answer the questions? (p.3)"

Thus the methodology of quasi-clinical inquiry must be as broad as the phenomenon of teaching and learning in elementary school classrooms. Generally, the inquiry will involve repeated measures, over time, on single entities. The recent developments in time series analyses and the methods employed in behavioral counseling research are appropriate to many issues in quasi-clinical inquiry. Specific interventions derived to affect practice will be implemented and the impact of the intervention on a set of objective measures is recorded. The investigative clinician also examines the unanticipated effects of the intervention on the myriad variables which suggest themselves at that time. A combination of objective and intuitive measures make up the data base for a specific empirical inquiry. Quasi-clinical inquiry is expected to frequently employ methods suggested by the phenomenon itself. Eclectic empiricism is the guiding philosophy.

Summary

In this paper, a broad perspective on the phenomenon of teaching and

learning in elementary school classrooms has been presented. We described the phenomenon as complex, dynamic, and extended in time. In our opinion, this broad view of the phenomenon should guide investigators in the development and implementation of a mode of inquiry.

We characterized, even stereotyped, conventional research as field work which relies heavily on designs adopted from agriculture and experimental psychology. We discussed some of the drawbacks of conventional research for studying the phenomenon of teaching and learning in classrooms. We also claimed that conventional research has had far too little impact on educational practice.

We concluded our presentation with an outline of quasi-clinical inquiry which we believe is well suited for the investigation of teaching and learning in classrooms. We distinguished quasi-clinical inquiry from conventional research by highlighting the wholistic approach; the study of single classrooms; the use of repeated measures in conjunction with planned interventions; the role changes consonant with collegial relations among participants, and the dual objectives of generating knowledge while in a helping relationship with school personnel. We also noted the kinds of methodology needed in quasi-clinical inquiry.

Our intention in writing this paper is not to displace conventional research but to call attention to the range of modes of inquiry which might be brought to bear on the study of teaching and learning in classrooms. Nor do we think our concerns are new. Many writers, from various areas of education, have called for and, in some cases, are carrying out field research which differs substantially from conventional research. (Bush, 1962; Dewey, 1929; Goldman, 1976; Sarason, 1971; Ward & Tikunoff, 1976; among others). For too long rigor in research on

teaching and learning has been synonomous with factorial designs. But rigorous inquiry is not a special attribute of conventional research. Other types of inquiry may be carefully documented, replicable and hence rigorous. A similar statement may be made about experimentation. Experimentation is a generic concept which is not defined by, but subsumes, the procedures associated with conventional research. Furthermore we note that theory construction is not restricted to specific kinds of inquiry. Quasi-clinical inquiry can be rigorous, experimental, and used in the service of theory construction.

Our final point concerns relevance. All kinds of inquiry may be relevant; but the crucial qualification is relevant for what? In order to discuss relevance, some objective, goal or criterion must be described. In our view, positively valued changes in educational practice as well as generation of educational theory are the major criteria for judging a method of inquiry. Conventional research has been of very limited relevance for these purposes. We believe that quasi-clinical inquiry which addresses classroom problems, and strives to bring about change in the sites where the inquiry is conducted, has great potential for both instructional theory and classroom practice. It may be true, after all, that there is nothing as theoretical as a good practice (Niwel, undated).

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